

WHAT IS CLAIMED IS:

1. A method of characterizing a pressure sensor of a process device, comprising:
applying a plurality of pressures to a pressure sensor of the process device across a characterization pressure range; and
receiving outputs from the pressure sensor related to the applied pressure;
determining a compensation relationship based upon the outputs from the pressure sensor;
wherein different applied pressures are non-uniformly distributed across the characterization pressure range.
2. The method of claim 1 wherein the process device comprises a flow transmitter.
3. The method of claim 1 wherein the process device comprises a level transmitter.
4. The method of claim 1 wherein the compensation relationship comprises a polynomial.
5. The method of claim 1 including comparing outputs of the pressure sensor at the plurality of differential pressures with reference values.

6. The method of claim 1 wherein the distribution of applied pressures is a linear function.

7. The method of claim 1 wherein the distribution of applied pressures is an exponential function.

8. The method of claim 1 wherein the distribution of applied pressures is a logarithmic function.

9. The method of claim 1 wherein the step of applying includes applying pressures at closer intervals over a lower pressure range than over a higher pressure range.

10. The method of claim 1 wherein the step of applying a plurality of pressures is performed at more than one temperature.

11. The method of claim 1 wherein the step of applying a plurality of pressures comprises moving a fluid past a primary element to create a differential pressure.

12. The method of claim 1 including storing compensation values in a memory of the process device which are related to the compensation relationship.

13. The method of claim 1 wherein the compensation values comprise polynomial coefficients.

14. The method of claim 1 wherein the pressure sensor comprises a differential pressure sensor.

15. The method of claim 1 wherein the characterization is for differential pressure and static pressure.

16. The method of claim 1 wherein the characterization is for static pressure and temperature.

17. A calibration apparatus configured to couple to the process device and implement the method of claim 1.

18. A process device including compensation values stored in a memory which are determined in accordance with the method of claim 1.